

CLAIMS

1. A hydrogenated block copolymer, which is (1) a hydrogenation product of a block copolymer having at least one polymer block mainly comprising a vinyl aromatic hydrocarbon and at least one polymer block mainly comprising a conjugate diene compound, and having a vinyl bonding amount V (%) based on the conjugate diene compound of from not less than 37% to less than 70%,

wherein (a) the total hydrogenation ratio H (%) of the unsaturated double bond based on the conjugate diene compound satisfies the following relational formulae:

$$V < H < 1.25 \times V + 10$$

$$50 \leq H < 80, \text{ and}$$

wherein (b) the hydrogenation ratio of the vinyl bond is 82% or more.

2. A block copolymer composition, comprising:

(1) the hydrogenated block copolymer according to claim 1, and

(2) a polyolefin based resin.

3. The block copolymer composition according to claim 2, comprising 1 to 50 parts by weight of component (1) and 99 to 50 parts by weight of component (2) with respect to 100 parts by weight of the total weight of components (1) and (2), wherein component (1) further satisfies the following conditions:

(c) the content of the vinyl aromatic hydrocarbon is 5 to 50% by weight, and

(d) the melt flow rate is 0.5 to 100 g/10 minutes.

4. The block copolymer composition according to claim 2, comprising 1 to 95 parts by weight of component (1) and 99 to 5 parts by weight of component (2) with respect to 100 parts by weight of the total weight of components (1) and (2), wherein component (1) further satisfies the following conditions:

(c) the content of the vinyl aromatic hydrocarbon is 5 to 35% by weight, and

(d) the number average molecular weight is from more than 30,000 to less than 330,000.

5. The block copolymer composition according to claim 2, comprising 20 to 95 parts by weight of component (1) and 80 to 5 parts by weight of component (2), each with respect to 100 parts by weight of the total weight of components (1) and (2), and 5 to 300 parts by weight of (3) a non-aromatic rubber softener and not more than 500 parts by weight of (4) an inorganic filler, each with respect to 100 parts by weight of component (1), wherein component (1) further satisfies the following conditions:

(c) the content of the vinyl aromatic hydrocarbon is 5 to 50% by weight, and

(d) the number average molecular weight is 50,000 to 1,000,000.

6. A block copolymer composition, comprising:

(1) 100 parts by weight of a hydrogenated block copolymer which is a hydrogenation product of a block copolymer having at least one polymer block mainly comprising a vinyl aromatic hydrocarbon and at least one polymer block mainly comprising a conjugate diene compound, and having a vinyl bonding amount V (%) based on the conjugate diene compound of from not less than 30% to less than 70%,

wherein (a) the total hydrogenation ratio H (%) of the unsaturated double bond based on the conjugate diene compound satisfies the following relational formulae:

$$V < H < 2 \times V + 10$$

$$30 \leq H < 80, \text{ and}$$

wherein (b) the hydrogenation ratio of the vinyl bond is 82% or more, and

(2) 20 to 400 parts by weight (with respect to 100 parts by weight of component (1)) of an adhesion-imparting agent.

7. The block copolymer composition according to claim 6, wherein component (1) further satisfies the following conditions:

(c) the content of the vinyl aromatic hydrocarbon is 5 to 60% by weight, and

(d) the peak molecular weight is 50,000 to 300,000.

8. The block copolymer composition according to claim 6, wherein component (1) comprises:

(1-A) 20 to 90% by weight of a hydrogenated block copolymer which is a hydrogenation product of a block copolymer having one polymer block mainly

comprising a vinyl aromatic hydrocarbon and one polymer block mainly comprising a conjugate diene compound, and having a vinyl bonding amount V (%) based on the conjugate diene compound of not less than 30% to less than 70%,

wherein (a) the total hydrogenation ratio H (%) of the unsaturated double bond based on the conjugate diene compound satisfies the following relational formulae:

$$V < H < 2 \times V + 10$$

$$30 \leq H < 80,$$

wherein (b) the hydrogenation ratio of the vinyl bond is 82% or more, and

wherein (c) the content of the vinyl aromatic hydrocarbon is 5 to 60% by weight; and

(1-B) 80 to 10% by weight of a hydrogenated block copolymer which is a hydrogenation product of a block copolymer having at least two polymer blocks mainly comprising a vinyl aromatic hydrocarbon and at least one polymer block mainly comprising a conjugate diene compound, and having a vinyl bonding amount V (%) based on the conjugate diene compound of from not less than 30% to less than 70%,

wherein (a) the total hydrogenation ratio H (%) of the unsaturated double bond based on the

conjugate diene compound satisfies the following relational formulae:

$$V < H < 2 \times V + 10$$

$$30 \leq H < 80,$$

wherein (b) the hydrogenation ratio of the vinyl bond is 82% or more, and

wherein (c) the content of the vinyl aromatic hydrocarbon is 5 to 60% by weight,

wherein the average molecular weight of component (1-A) and component (1-B) is 50,000 to 300,000.